

# **Enhancing the Competitiveness of High-Value Hardwood Producers**

## **Final Report**

Missouri Department of Agriculture  
Missouri Enterprise Business Assistance Center

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## **Introduction**

Drive through almost any hardwood forest in Missouri and you probably won't notice what 150 years of rape and pillage has done to our forests. We do not see the destruction because most of us cannot tell the difference between a high-grade forest and one full of cull timber. Even if we did know the difference, most people do not view it as a problem. In fact, many professionals associated with the forestry industry are also of the opinion that our forests are naturally low grade and it is nothing to be concerned with. The truth, however, is concerning. What man has done to the forest, and man's attitude toward what he has done, is very alarming. It has caused Missourians to believe that we can only market low value products. We have generated a situation where small producers are chained to a system that keeps them from realizing the full revenue potential of our greatest natural renewable resource.

The malignancy of this defeatist attitude flourishes in the fact that low-grade timber contributes to sawmills predominantly producing low-grade products. Low-grade products mean poor profit margins. Poor profit margins mean low paying jobs. Low paying jobs means an unskilled workforce. All of which produces a sub-culture that cannot see beyond subsistence living.

In search of accurate information Missouri Enterprise began researching the application of modern industrial practices and business models to small and medium sized companies. One of the most significant findings of this research is the fact the much of the Missouri hardwood industry is over 50 years behind in both its industrial practices and its marketing model. For the majority of business, locked into this antiquated attitude toward hardwood products, there is no enabling mechanism for capturing modern value adding processes as a means for entering new market areas. As a result, too many small and medium sized producers are generating predominately low value products, even from high-grade raw materials, because they do not understand how to compete in the higher value market areas.

It is a personal tragedy that the landowner, logger, and mill are all losing money because of outdated marketing concepts. Far worse, however, is the fact that Missouri's greatest renewable resource is being grossly wasted, resulting in millions of dollars being lost to our state economy each year. After all, Missouri has over 13 million acres of timberland, which covers 30 percent of the state. Of these 13 million acres 83% is privately owned with only 9% of the landowners having over 100 acres. Even in this highly disconnected and very non-standardized condition the industry is still capable of contributing \$3 billion annually to Missouri's economy. This contribution, however, should be significantly higher. The vast majority of the 417 Missouri sawmills are small poorly equipped operations primarily producing below grade forest products. From a very conservative perspective, this means that many of Missouri sawmills are producing products valued at \$0.25/BF when they should be producing products valued at \$1.75/BF. Even if the alleged 6-fold increase were only applicable to 1/2 of 1% of our forest products it would still mean an increase of \$90,000,000 in Missouri's annual economy.

Developing positive forward leaning attitudes is Missouri Enterprise's business. We decided to brake this vicious cycle by attacking the demand rather than the supply. Our objective was to provide producers with the knowledge required to market high-value finished lumber products. Once producers start selling high value products they will start demanding quality logs. This means that loggers will start demanding high value stands of timber. Eventually this will lead to forest stewardship and certified forest products. All of which offers a solution to the depressed hardwood industry of Missouri.

## **Solution Description**

The quality of our hardwood forests cannot be changed overnight! Changing harvesting methods will take time. But, our attitude toward marketing hardwood products can and should be changed over night. Knowledge is the key. By disseminating the right information to the right people attitudes will change. Missouri Enterprise provided Missouri producers with the knowledge to address issues such as:

1. Overcoming the attitude: "if this will work then why hasn't anyone done it before now?"
2. Overcoming the existing culture of poverty attitude associated with small sawmill operations.
3. Convincing local industry that quality hardwood lumber can be produced in Missouri.
4. Breaking into Missouri markets
5. Finding markets outside of the state.
6. Getting over the production hump!
  - a. Developing the skills required for producing quality products
  - b. Filling the product pipeline associated with "curing" the product
  - c. Developing a steady and reliable flow of quality logs
  - d. Understanding that this effort is as much for the next generation as it is the present generation

In order to answer these questions, Missouri Enterprise began to do research of the industry. To began this research we developed a survey that was sent to landowners, mills, and logging operations. From this we compiled data concerning the current state of the industry, and assessed the knowledge and procedures of those involved in Missouri's hardwood industry.

Missouri Enterprise then held two seminars covering the current situation in the primary wood processing industry and ways to improve it using the Lean Manufacturing principles. The first seminar covered logging operations, and the second covered sawmills. All attendees of the seminars received full copies of the reports relevant to the seminar. The seminars were hosted in Salem, MO and were telecasted to other cities where we received registrations. The information taught at the seminars was derived from

the reports developed under this project. Both seminars were successful with favorable attendance, and positive feed back from these attendees.

## **Results**

A Survey was mailed out to 35 sawmills, logging operations, and numerous landowners to reveal their current status, to uncover how they do business, and to discover what type of market philosophies they practice.

Once the survey was mailed we took our research to the field. During this portion of the study we shadowed loggers and toured mills. Many hours were spent recording data and analyzing the operations. This data was compiled and sorted to allow the researchers to highlight consistent downfalls in the current state of operations.

The results of this survey were very enlightening to the limited information available on this subject. We found that many sawmills never examine the current market. They develop a relationship with one buyer and never check to see who has the best price at the time.

Further, there is very little market information available except for the current program started by the Missouri Department of Agriculture. Another fact showed that Missouri sawmills sell a limited amount of grade if any, and cut it with the lower grade products to eliminate extra work.

With all the research completed Missouri Enterprise began take the compiled data and generate possible solutions for the discovered problems. These solutions were divided into three reports that eventually provided the information taught in the two seminars.

The first report covered the general application of Lean into the hardwood industry. At this time we gave a basic explanation of Lean and began to shown how to begin to look at your operation and how Lean could best fit it. This report combated the mindset that Lean will not work in the hardwood industry.

The second report focused on the Logging operations and the common waste we currently see in this segment of the industry. We separated the various task completed by loggers and demonstrated how Lean principles can be applied, and the great improvements that will be witnessed by this application.

The third report looked closely at the large amounts of waste that can commonly be seen in sawmills and examined a few of the reasons for this waste. This report dissected the processes that take place in a mill and how to use the Lean principles to improve each aspect of the overall process.

These reports demonstrate how, although it is different than we have become accustomed to, Lean is a viable solution for the Primary wood processing industry. They began to

show that Lean works so well in this industry due to the fact that it is a philosophy and not a set of rules to follow for success. It demonstrates how Lean is a “common sense” philosophy and that when we began to organize things that we may have known all along we can see unbelievable improvements to the current processes.

## **Conclusions**

One of the most obvious obstacles to implementing Lean in the hardwood industry is an existing culture, which is deeply entrenched. The very fact that much of the industry is still working with a 19th century business model is a positive sign that value-added concepts can be made to work, but overcoming the existing cultural obstacle is a very difficult undertaking. When mass production has driven the mill floor for many generations, the idea of reevaluating the market and then developing a Lean production process to meet current and future customer demands can be a daunting challenge. Missouri Enterprise cautions any timber company desiring to capture the benefits of Lean production to first take the time to understand both the national and the world market for hardwood timber products ...from the log to the kiln.

A major obstacle in transforming our timber industry along the lines of Lean production is the fact that much of primary processing is highly disconnected. In most cases, logging is an independent operation totally separate from the mill and is totally independent from the kiln and planning operations. It will be very difficult to transform any one of these processing steps without transforming all of the steps. It will be extremely difficult to capture the full cost savings of Lean without bringing all of the primary processes under a single control mechanism. It is also easy to predict that because of the tremendous cost savings to be realized by integrating as much of logging and milling as possible, eventually, large companies could come to dominate the timber industry and much of the milling operation could take place in the forest itself. Under this scenario, as Lean transforms the industry, the kiln will replace the mill as the pivot point for timber operations.

The third challenge that we see in applying Lean Principles to primary processing of hardwoods is the fact that our material flow starts with nature. Most Lean consultants and industrial engineers are used to dealing with processes where the raw material comes from a vendor and its quality is well controlled. But in the timber industry we are dealing with a raw material that is highly variable in type and quality. This natural occurring issue will complicate the Lean Implementation process and, if not properly addressed, it will slow down the transformation process and negatively impact workforce motivation.

Missouri Enterprise is convinced that Lean will eventually be adopted widely in the timber industry. The cost savings are too great for Lean to be ignored. We also believe that this may be a difficult, and perhaps painful process for some, as the timber industry has some unique aspects and Lean transformation must be very carefully executed. For those companies that take the time to understand the national and global markets, clearly

define process flow and empower their workforce, Lean Transformation will happen. And, eventually, Lean companies will dominate the industry.

The most important discovery of this project was that for the most part loggers and mill owners demonstrated great interest in the Lean concept. The only thing that held them back was assistance. If a program was developed to provide assistance for the hardwood industry through grants, low interest loans, or tax incentives, Missouri's Hardwood industry could be transformed.

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## **Attachments**

An Introduction to Lean Enterprise Principles for the Timber Industry  
An Introduction to Lean Enterprise Principles for Sawmill Operators  
An Introduction to Lean Enterprise Principles for Loggers

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